

What is Claimed is:

1. An array ferrule for use in a fiber optic connector comprising:

a main body having a fiber receiving cavity extending therethrough from a mating face to a rear end, a pair of pin slots formed in opposing side walls extending adjacent to and
5 precisely located with respect to the fiber receiving cavity, and a retention member slot being in communication with each pin slot;

a plurality of fibers precisely positioned within the fiber receiving cavity; and,
an encapsulant located around the fibers and substantially filling the fiber receiving cavity.

- 10 2. The array ferrule of claim 1 further comprising at least one pin located within one of the pin slots.

3. The array ferrule of claim 2 further comprising a retention member being secured within one of the retention member slots and being in engagement with the pin.

4. The array ferrule of claim 1 wherein the encapsulant is a metallic material.

- 15 5. A method of making a multi fiber ferrule comprising the steps of:

providing a ferrule blank having a pair of preformed slots extending inward from opposing sides toward a fiber receiving cavity which extends from a mating face to a rear end;
precisely aligning the blank on a mandrel placed within the fiber receiving cavity;
broaching a pin slot in each side surface such that the pin slot is precisely located

- 20 with respect to the fiber receiving cavity to form a ferrule main body;

positioning the ferrule main body within a ferrule receiving opening of a central fixture such that locating pins of the central fixture are positioned within the pin slots;

populating the fiber receiving cavity with a plurality of optical fibers;

accurately positioning the optical fibers using a plurality of combs over ends of the optical fibers which protrude from the mating face; and,

filling the fiber receiving cavity with an encapsulant.

6. The method of claim 5 wherein a first pair of combs is slid over the mating face to accurately position the plurality of fibers between teeth of the combs in a fiber receiving area of the combs.

7. The method of claim 6 wherein a second set of combs is slid over the first set of combs and through protruding ends of the optical fibers in a direction generally orthogonal to the first set of combs.

8. The method of claim 7 wherein the second set of combs is positioned such that reference surfaces of the second set of combs engage the locating pins to appropriately position the protruding fiber ends with respect to the pins.

9. An assembly tool for assembling a multi-fiber array ferrule comprising:
a table having a central opening passing between first and second major surfaces;
a plurality of guide slots formed on the first major surface extending between an edge of the table and the central opening;

a plurality of comb mounts resting upon the first major surface of the table and slidably fitting within one of the guide slots;

a comb being mounted to each respective comb mount; and,

a central fixture being mounted on the first major surface adjacent to the guide slots and over the central opening, the central fixture having a ferrule receiving opening passing therethrough and in communication with the central opening and at least one locating pin mounted within the ferrule receiving opening.

10. The assembly tool of claim 9 further comprising a comb holder being mounted to a respective comb mount for receiving each comb.

11. The assembly tool of claim 9 wherein the combs are mounted to slide along a top surface of the central fixture.

5 12. The assembly tool of claim 11 wherein at least one of the combs further comprises a reference surface for engaging the at least one pin.

13. The assembly tool of claim 12 wherein each comb includes a plurality of interlocking teeth forming spaces therebetween for receiving fiber ends.

10 14. The assembly tool of claim 13 wherein the combs are moved into an engagement position by sliding the comb mounts within the guide slots.

15. The assembly tool of claim 14 further comprising an encapsulant supply tube passing through an opening in a ferrule main body and being insertable into the ferrule receiving opening.